

Glasgow City Council

Biodiversity Duty Report

(2014/15, 2015/2016 and 2016/17)



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1. Introduction

- 1.1 The Nature Conservation (Scotland) Act (2004) created a duty on public bodies, including Glasgow City Council, to “further the conservation of biodiversity as far as is consistent with the proper exercise of those functions.” In so doing, public bodies must take regard of the *Scottish Biodiversity Strategy*.
- 1.2 The Wildlife and Natural Environment (Scotland) Act 2011 (WANE Act) amends the Nature Conservation (Scotland) Act (2004) and places an additional obligation on public bodies to report on compliance with the Biodiversity Duty every three years. The first report was submitted in January 2015. This is the second report.
- 1.3 The designated *Scottish Biodiversity Strategy* is ‘*Scotland’s Biodiversity: It’s in Your Hands (2004)*’ which sets out a vision for 2030 for the health of Scotland’s biodiversity. This has now been supplemented by the ‘*2020 Challenge for Scotland’s Biodiversity*’ which focuses on desired outcomes for 2020.
- 1.4 The two documents together are now designated by the Scottish Government as comprising the *Scottish Biodiversity Strategy*.
- 1.5 Glasgow City Council (GCC) carries out its Biodiversity Duty primarily through the implementation of the ‘*Glasgow’s Local Biodiversity Action Plan*’ and by helping achieve the national objectives and outcomes of the *Scottish Biodiversity Strategy* through local action.
- 1.6 There are 7 Core Council Services: Chief Executive’s Office, Corporate Services, Development and Regeneration Services, Land and Environmental Services, Education Services, Financial Services and Social Work Services as well as 10 Arm’s Length External Organisations (ALEOs). These are ACCESS, City Building, City Parking, City Property, Clyde Gateway, Cordia, Glasgow City Marketing Bureau, Glasgow Community and Safety Services, Glasgow Life and Jobs and Business Glasgow. The core Services and ALEOs were consulted for this current report.
- 1.7 As required by the legislation, this report covers the three years April 2014- March 2015, April 2015- March 2016 and April 2016- March 2017 (see Appendices).
- 1.8 Glasgow City Council delivers its key biodiversity responsibilities and project implementation through its Natural Environment officers within the Land and Environmental Services (LES); these are Biodiversity/Ecology Officers, Countryside Rangers, Arboriculture and Woodland Officers and a Horticulture Officer.
- 1.9 The Council is the lead organisation, and chair of, the Glasgow Local Biodiversity Action Plan which involves 16 partner organisations in carrying out projects and actions to conserve and enhance the City’s biodiversity. <https://www.glasgow.gov.uk/index.aspx?articleid=18407>

- 1.10 Glasgow City Council has signed a concordat with the Central Scotland Green Network. The Council is a signatory to the Climate Change Declaration and the 2012 Scotland Geodiversity Charter.

2 Mainstreaming

- 2.1 The quality standard 'Green Flag' award-winning parks (Keep Scotland Beautiful and other partners) in Glasgow all include some biodiversity elements.
- 2.2 Biodiversity is considered carefully in the management of all Glasgow Parks and where appropriate, habitats and species are protected and enhanced as part of overall park management.
- 2.3 Biodiversity benefits are integrated into the Metropolitan Glasgow Strategic Drainage Plan through the delivery of Sustainable Urban Drainage Systems (SUDS), green infrastructure and blue-green networks.
<http://www.mgsdp.org/>
- 2.4 The Glasgow i-trees project was accepted as a Strategies towards Energy Performance and Urban Planning (Step Up) project with the publication of the i-trees report in 2015.
- 2.5 Protecting biodiversity is a key consideration within Glasgow's Energy and Carbon Masterplan. The risks and opportunities of a changing climate for local biodiversity are being assessed and appropriate action is being prioritised and considered in preparation for the City's Climate Resilient Strategy and Action Plan.
<https://www.glasgow.gov.uk/CHttpHandler.ashx?id=32441&p=0>
- 2.6 Climate Ready Clyde, a City Region partnership programme includes biodiversity as a key part of its vision for a climate ready future.
- 2.7 GCC Social Work Services and Development Regeneration Services delivered new build properties for homeless people – the construction included meadow/wildflower grassed areas, bird nesting boxes and bird baths.

3. Actions taken to improve biodiversity conservation

- 3.1 This is a summary of key practical actions carried out for biodiversity. For more detail and a comprehensive list of actions, please see Appendices.

City-wide

- Refreshed LBAP drafted
- The Council held a Year of Green in 2015 which aimed to raise Glasgow's profile as a sustainable city and included 12 themed months, 157 public facing events, 70 partners and more than 4000 twitter followers.

- An audit of all the wildflowers grown successfully from seed at the city-wide wildflower nursery (Pollok Country Park) was carried out. 26 Scottish provenance species were successfully propagated and 1109 healthy plugs and potted plants grown on.
<https://www.glasgow.gov.uk/index.aspx?articleid=19879>

Grasslands

- The Glasgow's Buzzing final report was produced. Over a three year period, 13 hectares of land across 13 parks and greenspaces benefitted from wildflower species-rich meadow creation and enhancement works.
<https://www.buglife.org.uk/Glasgow%27s-Buzzing%21>
- Funding through 'Grow Wild' grant for the establishment of a wildflower nursery at Pollok Country Park.
- Pictorial meadow strips (a metre wide) were created at the front of uncut grass areas using Cornfield Annuals at 11 locations with a combined length of 765 metres.
- Ongoing enhancement and creation of wildflower meadows by Seven Lochs volunteers on GCC and Glasgow Life sites in the east end of Glasgow, including water vole sites.

Wetlands

- The Seven Lochs Wetland Park continues, with four project staff appointed and various projects being implemented, including wetland and grassland management; and species management for water voles.
<http://www.sevenlochs.org/>
- Floating island trial carried out at Hogganfield Loch – resulting in a pair of Great Crested Grebes nesting and raising one young (Friends of Glasgow's LNRs, My Park Scotland and GCC).
- Over 20 dams installed at Commonhead Moss to help restore the raised bog.

Woodlands

- Development of Urban Woodland Management Plans for 8 key woodlands across Glasgow (covering over 300ha) in order to set management objectives and works programmes which include bringing Cart & Kittoch SSSI back into favourable condition.
- I-Tree Eco survey established the ecosystem value of trees to the city: over 2 million trees, £4bn capital value of existing stock providing £4.3m ecosystem services value per annum.
- The survey of the Council's trees continues with findings and recommendations managed through GCC-LES electronic tree asset management system. Over 50,000 trees are now captured in the system.

Farmland

- Over 80 hectares of farmland at Carmunnock, Pedmyre and Windlaw are managed positively for biodiversity. This includes wildflower meadows, sensitive hedgerow management, trees and pond creation.

4. Partnership working and biodiversity communications

- 4.1 The Local Biodiversity Action Plan involves the Council working with 15 other organisations to implement the aims and objectives of the Plan. Partners include Scottish Natural Heritage, Forestry Commission (Scotland) and the Royal Society for the Protection of Birds (RSPB) Scotland.
<https://www.glasgow.gov.uk/index.aspx?articleid=18407>
- 4.2 The Council's Biodiversity Officers attend National Biodiversity Network meetings in spring and autumn.
- 4.3 The Seven Lochs Wetland Park project is Scotland's largest urban nature park for people, nature and heritage. This ambitious project brings together 20 square metres of lochs, parks, nature reserves and woodlands. It is a partnership between the Glasgow and Clyde Valley Green Network Partnership, Glasgow City Council, North Lanarkshire Council, Forestry Commission Scotland, Scottish Natural Heritage, The Conservation Volunteers and others.
<http://www.sevenlochs.org/>
- 4.4 The RSPB 'Giving Nature A Home' project continued in collaboration with the Council's Land & Environmental Services and Glasgow Life.
<https://www.rspb.org.uk/about-the-rspb/at-home-and-abroad/scotland/glasgow/>
- 4.4 GCC-DRS, Glasgow Life and Scottish Badgers signed a data sharing agreement in 2012 to assist with the planning process and to ensure protected species statutory obligations are met.
- 4.5 i-Tree eco and i-Tree hydro reports were published in 2015, completing a partnership project between the Council, Forestry Commission (Scotland) and Forest Research. The project provided an assessment of the impact of trees on a range of ecosystem services.
- 4.6 The Council's Countryside Ranger Service delivered the biodiversity message in 2016/17 to over 10,000 members of the public. This included nearly 4000 school children at outdoor education events, over 5000 people at guided walks and local nature reserve days and 1000 through volunteering on practical conservation tasks. The Countryside Rangers worked with 24 different partner agencies collaboratively in achieving these outputs and outcomes.
- 4.7 Local Nature Reserve celebrations were held each year at key sites, attracting many visitors and volunteers who helped plant over 10,000 wildflowers in the meadows, wetlands and woodlands.

4.8 Fossorial water vole website and 'Water Vole Fun Facts' were created to promote the special fossorial water vole population in Glasgow. Research, monitoring, and survey training has been carried out by the University of Glasgow, supported by Scottish Natural Heritage, Glasgow Natural History Society and the Council.

<https://www.glasgow.gov.uk/index.aspx?articleid=19877>

4.9 Glasgow's fossorial water voles were featured on the One Show.

5. Biodiversity highlights and challenges

- In total, Glasgow now has over 65 hectares of wildflower meadows managed for biodiversity, which amounts to more than 75 Hampden Park sized football pitches.
- Pollinator surveys carried out as part of the Glasgow's Buzzing project recorded 139 species over 3 years across 13 parks and included 17 species potentially new to Glasgow (several true bug species and 2 species of solitary bees).
<https://www.buglife.org.uk/Glasgow%27s-Buzzing%21>
- Pond naturalisation projects at Knightswood Park and Alexandra Park created new habitats and enhanced biodiversity. These projects also involved volunteers and community groups and helped to promote biodiversity as positive change.
- The main challenge ahead, over the next few years, continues to be finding new ways to deliver biodiversity benefits for Glasgow within the current financial climate. This, to date, has been best achieved through fully engaging with all services and partner organisations to maximise the efficiency of project delivery, and this approach will continue.

6. Monitoring

6.1 Biological records are maintained and enhanced by Glasgow Life through the Glasgow Museums Biological Records Centre – 24,049 additional records added 2014-17. Data gathered from monitoring and surveys is regularly entered into the database and records are collated and sent to the National Biodiversity Network (NBN). <http://www.glasgowlife.org.uk/museums/about-glasgow-museums/projects/Wild%20About%20Glasgow/Pages/default.aspx>

- Water fowl monitoring (of over 30 species) is carried out annually at 15 water bodies as part of the national Wetland Birds Survey by the British Trust for Ornithology (BTO).
- Blue-green Algae monitoring is carried out annually at 43 water bodies city-wide.
- Annual monitoring of key LBAP species is carried out – Bog Rosemary, Green Hairstreak, Small Pearl-bordered Fritillary.
- Butterfly Transects and surveys are carried out annually at a number of sites.

- Water Vole surveys have been carried out at a variety of East End sites.
- Surveys of Badgers and Otters are carried out as required.
- The survey of the Council's trees continues, with over 50,000 trees now captured in the database.

7. Contribution to targets

Targets/key steps from Chapter 1 (Healthy ecosystems) of the '2020 Challenge for Scotland's Biodiversity'	Contribution to key step	Justification
(1.1) Encourage and support ecosystem restoration and management, especially in catchments that have experienced the greatest degradation	√	Seven Lochs Wetland Park project and Glasgow's Buzzing project are landscape scale projects which encourage and support ecosystem restoration and management.
(1.2) Use assessments of ecosystem health at a catchment level to determine what needs to be done	√	Seven Lochs Wetland Park project has involved peatland and hydrology studies and ecological monitoring of water courses to inform a Landscape Conservation Action Plan which is now being implemented.
(1.3) Government and public bodies, including SNH, SEPA and FCS, will work together towards a shared agenda for action to restore ecosystem health at a catchment scale across Scotland	√	The implementation of Glasgow LBAP actions contribute to action to restore ecosystem health.
(1.4) Establish plans and decisions about land use based on an understanding of ecosystems. Take full account of land use impacts on the ecosystems services that underpin social, economic and environmental health	√	The City Development Plan Supplementary Guidance 7 'Natural Environment' was approved. It states that all new developments should conserve and enhance populations of LBAP priority species and that development should not result in biodiversity loss.

Targets/key steps from Chapter 1 (Healthy ecosystems) of the ‘2020 Challenge for Scotland’s Biodiversity’	Contribution to key step	Justification
(3.1) Provide opportunities for everyone to experience and enjoy nature regularly, with a particular focus on disadvantaged groups	✓	GCC-CRS events promote biodiversity to a diverse range of audiences. Glasgow has 12 Local Nature Reserves for biodiversity and public access and enjoyment of nature.
(3.2) Support local authorities and communities to improve local environments and enhance biodiversity using greenspace and green networks, allowing nature to flourish and so enhancing the quality of life for people who live there	✓	The implementation of Glasgow LBAP actions.
(3.3) Build on good practice being developed by the National Health Service (NHS) and others to help encourage greenspace, green exercise and social prescribing initiatives that will improve health and wellbeing through connecting people with nature	✓	TCV and other volunteers have carried out habitat management in Glasgow parks, local nature reserves and other open spaces.
(3.4) Increase access to nature within and close to schools, and support teachers in developing the role of outdoor learning across the Curriculum for Excellence	✓	GCC-CRS work with schools for outdoor learning and the Curriculum for Excellence.

Targets/key steps from Chapter 1 (Healthy ecosystems) of the '2020 Challenge for Scotland's Biodiversity'	Contribution to key step	Justification
(3.5) Encourage public organisations and businesses to review their responsibilities and action for biodiversity, and recognise that increasing their positive contribution to nature and landscapes can help meet their corporate priorities and performance	✓	The Council carries out its Biodiversity Duty primarily through the implementation of the LBAP and via its Biodiversity Officers.
(4.1) Ensure that the management of protected places for nature also provides wider public benefits	✓	Glasgow's Local Nature Reserves provide places for wildlife and for people's enjoyment and access to nature.
(4.3) Integrate protected areas policy with action for wider habitats to combat fragmentation and restore key habitats	✓	City Development Plan SG7 highlights the need to protect green networks through the planning process.
(4.5) Involve many more people than at present in this work and improve understanding of the poorly known elements of nature	✓	TCV, Friends of Parks and other volunteers contribute to habitat management and this helps raise awareness of biodiversity in the city.
(5.1) Promote an ecosystem approach to land management that fosters sustainable use of natural resources and puts biodiversity at the heart of land-use planning and decision-making	✓	The refreshed LBAP takes an ecosystem approach to habitats and species management.
(5.3) Support 'High Nature Value' farming and forestry	✓	Woodlands in GCC ownership are managed for wildlife and recreation. Over 80 hectares of farmland at Carmunnock, Pedmyre and Windlaw is managed positively for biodiversity.

Targets/key steps from Chapter 1 (Healthy ecosystems) of the '2020 Challenge for Scotland's Biodiversity'	Contribution to key step	Justification
(5.4) Put in place the management necessary to bring Scotland's protected areas into favourable condition and improve the ecological status of water bodies	√	Management of Cart & Kittoch SSSI aims to bring the site into favourable condition. LNRs are managed to conserve and enhance biodiversity. Glasgow's pond naturalisation programme is improving the ecology of city park ponds.
(5.6) Restore and extend natural habitats as a means of building reserves of carbon and to help mitigate climate change	√	Restoration of Commonhead Moss raised bog by installing dams to raise the water level. City-wide pond creation and naturalisation, woodland and hedge planting, grassland management and meadow creation.
(5.7) Provide clear advice to land and water managers on best practice	√	GCC-LES Biodiversity Officers provide advice on habitat and species management to other Council staff.

Acronyms

ALEO	Arm's length External Organisation
BREEAM	British Research Establishment Environmental Assessment Method
BTO	British Trust for Ornithology
CfE	Curriculum for Excellence
CRS	Countryside Ranger Service
CSV	Community Service Volunteers
DRS	Development and Regeneration Services
FCS	Forestry Commission Scotland
FoGLNRs	Friends of Glasgow's Local Nature Reserves
FRM	Flood Risk Management
GCC	Glasgow City Council
GNAH	Give Nature a Home
IWMS	Integrated Water Management System
LBAP	Local Biodiversity Action Plan
LES	Land and Environmental Services
LNR	Local Nature Reserve
MGSDP	Metropolitan Glasgow Strategic Drainage Partnership
NBN	National Biodiversity Network
NEF	Natural Environment Framework
RSPB	Royal Society for the Protection of Birds

SEPA	Scottish Environment Protection Agency
SINC	Site of Importance for Nature Conservation
SNH	Scottish Natural Heritage
SUDS	Sustainable Urban Drainage System
TCV	The Conservation Volunteers
WIAT	Woodland in and around Town

Appendix (i)
Glasgow City Council
Biodiversity Monitoring Report
April 2014- March 2015

1. Background and Context

1.1 This report has been compiled by Land and Environmental Services' Natural Environment Team with the support of the Council's partners in the Glasgow Biodiversity Partnership. The purpose of the partnership is to bring a broad range of expertise to the development of Glasgow's Local Biodiversity Action Plan. The Council established a Glasgow Biodiversity Partnership consisting of representatives from 19 different environmental organisations. Key partners include Scottish Natural Heritage, Forestry Commission Scotland, Scottish Environmental Protection Agency and the Royal Society for the Protection of Birds (Scotland) along with other environmental interest groups.

1.2 Monitoring is a crucial part of the process and this report summarises the outcomes of the 11th Monitoring Report of Glasgow's Local Biodiversity Action Plan.

1.3 Over the past year, the Natural Environment Team has been working with its partners to deliver the implementation of a number of key actions as detailed within Glasgow's Local Biodiversity Action Plan (LBAP).

1.4 Under the Nature Conservation (Scotland) Act (2004), all public bodies in Scotland are required to further the conservation of biodiversity when carrying out their responsibilities. The Council fulfils this primarily through the implementation of the Glasgow LBAP.

1.5 The Wildlife and Natural Environment (Scotland) Act (2011), further requires public bodies in Scotland to provide a publicly available report, every three years, on the actions they have carried out to meet the biodiversity duty.

The content of this annual biodiversity report will contribute towards the statutory Biodiversity Duty Report due for publication in January 2018.

2. Monitoring Report

2.1 The year to end March 2015 saw further progress on many fronts for all the main habitat groups (Grasslands, Wetlands, Woodlands and Farmland) which are reported in sections 2.1.1. to 2.1.3 of this report and useful work being undertaken for several species groups such as butterflies, waterfowl, wildflowers and water voles as indicated in section 2.1.4. Many initiatives are on-going; however, each year new projects or activities are started.

2.1.1 Grasslands and Farmland

The targets for unimproved grassland, heathland and farmland are to ensure that there is no net loss of such habitats and that attempts should be made to increase their extent and quality through restoration and positive management. Key outcomes for the period include:

- Over 80 hectares of farmland at Carmunnock, Pedmyre and Windlaw is managed positively for biodiversity. This includes

wildflower meadows, farmland bird grassland (cut after bird breeding), sensitive hedgerow management, trees, pond creation and un-harvested crops for winter bird food. 49 hectares are funded by the Scottish Rural Priorities Programme (recently renamed Agri-Environment Climate Scheme -Rural Priorities)

- In total, Glasgow now has over 65 hectares of wildflower meadows managed for biodiversity, which amounts to more than 75 Hampden Park sized football pitches.
- The Glasgow's Buzzing final report was produced. Over a three year period 13 hectares of land across 13 parks and greenspaces benefitted from wildflower species-rich meadow creation and enhancement works.
- A Glasgow meadow management contract was initiated for 9 key sites.
- RSPB House Sparrow project began with meadow plots created at Maryhill Park, Glasgow Necropolis and Elder Park.
- 43,000 daffodil bulbs were planted over 2 days at Ruchill Park, using a bulb planting compact tractor in a trial project. Wildflower seed was sown onto the disturbed soil and 50 wildflower plugs were planted in the soil slits.
- Wildflower hedgerow planting at Tollcross Park.
- Wildflower meadow planting carried out at Hogganfield Park LNR, Glasgow Botanic Gardens, Glasgow Green and Pollok Country Park.
- FCS created a bee bank at Cardowan Moss.

2.1.2 Wetlands

The targets for wetlands are to ensure that there are no net losses of such habitats and that attempts should be made to increase their extent and quality through creation, restoration and positive management. Key outcomes for the period include:

- Knightswood Park pond naturalised, with edge and island creation and wildflower and aquatic planting.
- Alexandra Park Boating Pond naturalised, with edge and island creation and wildflower and aquatic planting.
- Maryhill Park wetland creation with associated damp wildflower meadow.

- Cathkin Marsh final monitoring report produced.
- Scrub clearance at Commonhead Moss LNR.
- Over 20 dams installed at Commonhead Moss LNR by March 2015

2.1.3 Woodland

The targets for woodland are to ensure no further loss in extent of the existing woodlands whilst encouraging regeneration, new planting and appropriate management to increase the amount and quality of woodland in the city.

The Natural Environment Officer (Woodland) based in LES, remains the focus for implementing woodland management and access work on council land as well as enabling and assisting community participation in woodland management.

A large percentage of woodland management works on council land is enabled through seeking Scottish Government grants (Scottish Rural Development Programme). Key outcomes for the period include:

- Ensuring safe sites for Commonwealth Games through tree assessment city-wide.
- Supporting community groups in undertaking direct woodland management and creation of access for all paths in council sites.
- Planting of over 55 extra heavy standard trees as part of annual strategic tree planting programme.
- Over 47,000 individual trees surveyed and stored in council's tree management system.
- I-Tree Eco survey established the ecosystem value of trees to the city: over 2 million trees, £4bn capital value of existing stock providing £4.3m ecosystem services value per annum.
- Removal of non-native woodland regeneration at Cart and Kittoch SSSI.
- 500 native tree whips planted in Pollok Country Park following Rhododendron removal.
- Ongoing maintenance of newly planted woodland in King's Park.
- Detailed design works produced for proposed woodland creation at King's Park old golf course as part of SUDS to manage surface water locally.
- Presentation on Glasgow's urban forest estate at the Arboricultural

Association's annual conference in London.

- FCS prepared Woodland Management Plan for leased Glasgow woods sites.
- FCS carried out invasive species control, woodland thinning and litter picks at their sites in Glasgow.

2.1.4 Species Survey and Monitoring

The target for species monitoring is to understand the variety distribution and numbers of species that inhabit our city and record trends over time. Glasgow's records are maintained in the records centre located at Kelvingrove Art Gallery and Museum. Key outcomes for the period include:

- Butterfly surveys and transects are coordinated by the Glasgow Countryside Ranger Service (CRS) and carried out by volunteers at a number of sites including Robroyston Park LNR, Hogganfield Park LNR and Commonhead Moss LNR. The results are sent to the UK Butterfly Monitoring Scheme (Butterfly Conservation) and contribute to national biodiversity indicator monitoring.
- Waterfowl monitoring (over 30 different species) was carried out at 15 water bodies as part of the national Wetland Birds Survey (British Trust for Ornithology) to contribute to assessing national trends.
- Pollinator surveys carried out as part of the Glasgow's Buzzing project recorded 139 species over 3 years across 13 parks and included 17 species potentially new to Glasgow (several true bug spp and 3 spp of solitary bees).
- Hogganfield Loch counted as part of International Swan Census.
- Fossorial Water Vole Workshops were carried out at Cranhill Park by the University of Glasgow Masters research student.
- Monitoring of key species (Green Hairstreak and Small Pearl-bordered Fritillary) carried out at Commonhead Moss LNR.
- M74 biodiversity and protected species monitoring carried out on behalf of Transport Scotland.
- Froglife carried out night-time amphibian surveys at Bishop Loch, Commonhead Moss, Hurllet Hill, Queen's Park and Festival Park.

2.1.5 People and Awareness

The broad objective for raising awareness is to spread information on the environment in a Glasgow context to all sectors of the community. The Natural Environment Team includes 8 Countryside Rangers FTE posts and 1 Senior Countryside Ranger who are site based and play a major role in

delivering environmental education, awareness and access. Key outcomes for the period include:

- The Conservation Volunteers (TCV) co-ordinated by GCC-LES Biodiversity Officers hosted 53 grant funded volunteer team days throughout the City, carrying out grassland, woodland and wetland habitat restoration work – 365 volunteers carried out 1,460 volunteer hours at 20 sites including tasks as varied as wildflower planting at Pollok Country Park and a site wide litter clean up at Commonhead Moss LNR.
- Natural Environment Framework (NEF) Portal was created on the Glasgow City Council website to allow people to search for all related natural environmental strategies, policies and plans.
- Biodiversity Duty Report was produced for Scottish Government by Glasgow City Council.
- Malls Mire LNR and an extension to Robroyston Park LNR were declared taking the figure for LNR area (hectares) per 1,000 population of the city to 0.86 hectares.
- The proposed declaration of a new LNR at Claypits, Hamiltonhill (which will achieve the target 0.88 hectares/1,000 population) was the subject of a Planning Charette with local stakeholders.
- Glasgow City Council Green Year 2015 was launched at Glasgow Botanic Gardens.
- Bat Training Day was held for 8 council staff covering bat ecology, bat conservation, legal and planning issues.
- Integrated Green Network Workshop was attended by biodiversity officers.
- Biodiversity information provided to the four day Forth & Clyde Applecross Charrette.
- New LNR leaflet produced by the Friends of LNRs.
- FoLNRs hosted talks on Dams to Darnley LNR and Easterhouse Woodlands.
- Community bench installed in Robroyston Park LNR.
- LBAP Partnership meeting held as part of LBAP refresh process.
- GCC-CRS organised the annual International Biodiversity Day, held at Dawsholm Park LNR, funded by SIF and attended by 3 primary schools and approximately 175 pupils.

- GCC-CRS held 97 Curriculum for Excellence through outdoor learning visits to 62 schools across 20 different Glasgow parks.
- GCC-CRS delivered Schools Parks Twinning Initiative 'The Healthy World' through talks and walks on nature conservation and biodiversity. In April to June 2014 646 school children across 27 different school groups participated.
- GCC-CRS ran 4 forest schools programmes.
- Wild About Glasgow countryside events included 32 free guided walks, activities and events to promote biodiversity, attracting over 3000 participants
- GCC-CRS delivered 4494 volunteer hours with 1970 volunteers in practical conservation tasks across the city to improve biodiversity.
- GCC-CRS delivered the biodiversity message to 9541 members of the public, including 3761 school children at outdoor events and 5780 at guided walks, LNR days and volunteering on practical conservation projects.
- Conservation Days carried out at Kelvingrove Park butterfly garden with volunteers from RSPB and TCV.
- Alexandra Park information day held for local community, which included biodiversity projects.
- RSPB Garden Festival was held in September as part of 'Giving Nature a Home Glasgow'. This involved celebrating 22 projects with 55 events over the month. The Festival reached over 15,000 people through social media, flyers and attendance at events.
- Bioblitz carried out at Kelvingrove Park in May, organised by RSPB as part of 'Giving Nature a Home Glasgow'.
- LNR celebration events held at 6 LNRs, each funded by CSV, attracting a total of 574 volunteers. A total of 4000 meadow plants and trees were planted at the events.

Appendix (ii)

Glasgow City Council

Biodiversity Monitoring Report

April 2015- March 2016

1. Background and Context

1.1 This report has been compiled by Land and Environmental Services' Natural Environment Team with the support of the Council's partners in the Glasgow Biodiversity Partnership. The purpose of the partnership is to bring a broad range of expertise to the development of Glasgow's Local Biodiversity Action Plan. The Council established a Glasgow Biodiversity Partnership consisting of representatives from 16 different environmental organisations. Key partners include Scottish Natural Heritage, Forestry Commission Scotland, Scottish Environmental Protection Agency and the Royal Society for the Protection of Birds (Scotland) along with other environmental interest groups.

1.2 Monitoring is a crucial part of the process and this report summarises the outcomes of the 12th Monitoring Report of Glasgow's Local Biodiversity Action Plan.

1.3 Over the past year, the Natural Environment Team has been working with its partners to deliver the implementation of a number of key actions as detailed within Glasgow's Local Biodiversity Action Plan (LBAP).

1.4 Under the Nature Conservation (Scotland) Act (2004), all public bodies in Scotland are required to further the conservation of biodiversity when carrying out their responsibilities. The Council fulfils this primarily through the implementation of the Glasgow LBAP.

1.5 The Wildlife and Natural Environment (Scotland) Act (2011), further requires public bodies in Scotland to provide a publicly available report, every three years, on the actions they have carried out to meet the biodiversity duty.

The content of this annual biodiversity report will contribute towards the statutory Biodiversity Duty Report due for publication in January 2018.

2. Monitoring Report

2.1 The year to end March 2016 saw further progress on many fronts for all the main habitat groups (Grasslands, Wetlands, Woodlands and Farmland) which are reported in sections 2.1.2. to 2.1.4 of this report and useful work being undertaken for several species groups such as butterflies, waterfowl, wildflowers and water voles as indicated in section 2.1.4. Many initiatives are on-going; however, each year new projects or activities are started.

2.1.1 City-wide

- Refreshed LBAP drafted.
- The Council held a Year of Green in 2015 which aimed to raise Glasgow's profile as a sustainable city and included 12 themed

months, 157 public facing events, 70 partners and more than 4000 twitter followers.

- SINC assessment review drafted by GCC-LES Natural Environment Team.
- GCC City Development Plan Supplementary Guidance on biodiversity prepared.
- Local Nature Reserve Vision prepared for 2015-2020.
- An open space audit was carried out as part of the Glasgow Open Space Strategy. This included biodiversity criteria.
- RSPB 'Giving Nature A Home' project continued in collaboration with Glasgow Life and GCC-LES.
- M74 habitat and protected species monitoring carried out on behalf of Transport Scotland.
- 8 Parks and LNRs have retained their Green Flag status.
- Water vole thesis on the ecology of Glasgow's unusual urban fossorial water population was completed and submitted by university student (funded by GCC and GNHS) as part of University of Glasgow, SNH, GCC and GNHS partnership project.
- Weekly planning lists monitored by GCC-LES Biodiversity Officers for potential biodiversity impact and enhancement opportunities.
- Ecological survey reports generated for sites as part of planning applications for developments, and biodiversity included in development briefs/marketing information for city property transactions.

2.1.2 Grasslands and Farmland

The targets for unimproved grassland, heathland and farmland are to ensure that there is no net loss of such habitats and that attempts should be made to increase their extent and quality through restoration and positive management. Key outcomes for the period include:

- Grassland meadow management carried out on 5 Hectares of

council-owned land.

- 0.4 hectares of meadow creation carried out at Tollcross Park.
- Wildflower meadow mix seeded at Alexandra Park.
- Inspiring Meadows conference attended by GCC-LES Biodiversity Officers and GCC-CRS.
- Forestry Commission Scotland (FCS) installed a bee bank at Cardowan Moss.
- Funding through 'Grow Wild' grant for the establishment of a wildflower nursery at Pollok Country Park.
- 10 House Sparrow meadow plots created as part of RSPB's 'Giving Nature A Home' project (Maryhill Park, Cleaves Primary School, Hayburn Park, Glasgow Necropolis, Ardery Street, Elder Park and Trinley Brae).

2.1.3 Wetlands

The targets for wetlands are to ensure that there are no net losses of such habitats and that attempts should be made to increase their extent and quality through creation, restoration and positive management. Key outcomes for the period include:

- Alexandra Park boating pond phase 2 naturalisation completed – creation of two islands and edge vegetation.
- Alexandra Park duck pond naturalisation completed – trees removed from islands which were seeded with wildflowers, also areas of emergent vegetation created as cover for waterfowl.
- New pond created at Dams to Darnley LNR.
- Glasgow University and Froglife project assessed road tunnel usage by amphibians at Frankfield Loch and found heavy usage over an extended period. They also found that environmental factors influence which tunnel is most used.
- Seven Lochs Wetland Park project HLF bid submitted for landscape scale ecosystem and historical project.

2.1.4 Woodland (& Urban Tree Cover)

The targets are to ensure no further loss in extent of the existing woodlands and amenity tree cover whilst encouraging regeneration, new planting and appropriate management to increase the amount and quality of tree cover habitats in the city.

The Natural Environment Officer (Woodland) based in LES, remains the focus for implementing woodland management and access work on council land as well as enabling and assisting community participation in woodland management.

A large percentage of woodland management works on council land is enabled through seeking Scottish Government grants (Scottish Rural Development Programme). Key outcomes for the period include:

- Starting development of Urban Woodland Management Plans for 8 key woodlands across Glasgow (covering over 300ha) in order to set management objectives and works programmes which include bringing Cart & Kittoch SSSI back into favourable condition.
- Supporting community groups in undertaking direct woodland management and creation of access for all paths in council sites.
- Identifying additional UK BAP woodland Priority Habitats in Glasgow as part of the LBAP refresh; these are Upland Mixed Ashwoods, Upland Oakwoods and Wood-Pasture & Parkland making a total of 6 UK BAP woodland Priority Habitats in Glasgow along with Lowland Mixed Deciduous Woodlands, Upland Birchwoods and Wet Woodland.
- Planting of over 170 extra heavy standard trees and 925 woodland whips as part of annual strategic amenity tree planting programme.
- Over 49,000 individual trees surveyed and stored in council's tree management system.
- On-going maintenance of newly planted woodland in King's Park.
- Detailed design works produced for proposed woodland creation at King's Park old golf course as part of SUDS to manage surface water locally.
- Restoration of designed landscape and woodland management plan development for Alexandra Park.
- Woodland thinning at Springburn Park SINC.
- FCS undertook tree transplanting at Bishop Loch.
- FCS carried out bulb planting at Cardowan Moss.
- FCS carried out invasive species control at their sites in Glasgow.

- FCS carried out habitat surveys at Easterhouse and Drumchapel woods.
- 700 woodland plants planted at Malls Mire LNR.
- 100 native species of tree planted by community council at Woodside.

2.1.5 Species Survey and Monitoring

The target for species monitoring is to understand the variety, distribution and numbers of species that inhabit our city and record trends over time. Glasgow's records are maintained in the Glasgow Museums Resource Centre. Key outcomes for the period include:

- Glasgow Life maintained and enhanced the biological records database for Glasgow (Glasgow Museums Biological Records Centre) with 42,246 records during the year.
- The Biological Audit continues to be updated on a regular basis.
- SNH funded water vole project started in November.
- Cranhill Park fossorial water voles' tunnel system (part of) was mapped using ground penetrating radar (the first time this technology has been used for small mammals).
- Solitary bee population monitoring at Victoria Park
- M74 biodiversity and protected species monitoring carried out on behalf of Transport Scotland.
- FCS carried out European protected species surveys at Easterhouse and Drumchapel woods.
- Butterfly Transects were carried out at Hogganfield, Robroyston, Hurlethill and Cathkin Braes from April to September.
- Glasgow Life carried out a butterfly transect at Glasgow Museums Resource Centre in Nitshill.
- Park nest box survey carried out by university student intern with 16 parks surveyed and 186 nest boxes identified. 62% of these are in good condition.
- Friends of LNRs monitored 16 bird nest boxes at Dawsholm Park LNR, 5 bird nest boxes at Hogganfield Park LNR and 2 bird nest boxes at

Bingham's Pond SINC.

- University of Glasgow studied the effects of light pollution on blue tits' nesting success in urban and rural sites. GCC hosted the urban site at Kelvingrove Park.
- Frog population monitoring carried out at 9 key sites (Hogganfield Park LNR, Robroyston Park LNR, Dawsholm Park LNR, Cardowan Moss LNR, Festival Park, Hurllethill, Rosshall, Windlaw and Cathkin Braes.
- Blue-green algae (cyanobacteria) monitoring was carried out on all main water bodies in Glasgow with water sampling and testing.
- RSPB GNAH developed and organised bioblitz events at Kelvingrove Park, Hamiltonhill Claypits and Glasgow Necropolis in July.
- RSPB GNAH held 10 training events on wildlife and surveying techniques.
- RSPB GNAH trained 30 house sparrow volunteers to survey Glasgow's house sparrow population.

2.1.6 People and Awareness

The broad objective for raising awareness is to spread information on the environment in a Glasgow context to all sectors of the community. The Natural Environment Team includes 8 Countryside Ranger FTE posts and 1 Senior Countryside Ranger who are site based and play a major role in delivering environmental education, awareness and access. Key outcomes for the period include:

- Scottish Government Environment Minister launched the 'Six Big Steps for Nature' at 7 Lochs event in Easterhouse (funded by Grow Wild).
- TCV volunteers carried out 735 hours of habitat restoration at 15 sites.
- TCV corporate volunteers carried out 455 hours at 9 sites.
- TCV Seven Lochs volunteers carried out 772 hours at 6 sites.
- LES-CRS delivered 3600 volunteer hours with over 2000 volunteers in practical conservation tasks across the city.
- LNR celebration events were held at 4 LNRs (Malls Mire, Robroyston Park, Hurllethill and Hogganfield Park) each funded by CSV, attracting a total of 831 volunteers.
- Volunteers at the LNR celebration events planted over 2000 meadow and

pond plants, created hibernacula, cleared paths and vegetation and carried out a pond survey.

- Schools Biodiversity Day was held at Malls Mire LNR in May, with 168 primary school pupils attending to participate in 7 activities.
- RSPB GNAH involved over 1700 nursery and primary school pupils in field teaching at Kelvingrove Park, 1900 children and their families engaged in the project, 236 young people engaged through the John Muir Award and 50 weekly sessions delivered to toddlers and their families at Kelvingrove Museum and Art Galleries.
- RSPB GNAH held a Wildlife Garden Festival, engaging more than 2000 people at 70 events across the city.
- RSPB GNAH engaged 50 volunteers and delivered 22 practical conservation days. Also worked with 21 community groups to improve their sites for nature.
- RSPB GNAH worked with 6 ambassador secondary schools on priority species – including advocacy within local communities and decision making and works in school grounds to benefit the target species.
- Wild Waters of the White Cart Project trainee started in January to engage communities with biodiversity on the south side of Glasgow.
- Bioblitz carried out at Kelvingrove Park, attended by Froglife, Buglife, RSPB and Friends of River Kelvin.
- Kelvin Biodiversity Network Conference held which included a biodiversity presentation by LES Natural Environment Officer.
- LBAP Partnership meetings were held in June and November.
- GCC-LES Biodiversity Officer attended the biodiversity network meeting in November.
- FoLNRs held a community event at Dawsholm Park in October, planting hedging, erecting bird nest boxes and carrying out a litter pick.
- GCC website redesigned, including new layout of biodiversity pages.
- Butterflies and Blooms event at Pollok Country Park attracted 320 attendees.
- Butterflies and Blooms event – 500 wildflowers planted by TCV volunteers.
- Dragon in Your Garden event at Botanic Gardens held to show how to attract wildlife and garden in a wildlife-friendly way.
- Froglife attended Vet Rodeo at Glasgow University Vet School and gave information on species, habitat creation and craft activities.

- Glasgow's fossorial water voles featured on the One Show.
- Glasgow Water Voles included in 'Resilient Glasgow' document.
- Glasgow Water Voles articles in GCC City Insider, BBC Wildlife, TCV Bulletin and RSPB magazine.
- SNH funded part time Water Vole Ambassador post based at the University of Glasgow as part of the partnership project with GCC and GNHS.
- GCC-LES Biodiversity Officer/Water Vole Ambassador gave talk on fossorial Water Voles to the Scottish Green Infrastructure Forum.
- Water Vole Detective event at Cranhill Park attracted 25 attendees.
- GCC-CRS held 163 curricular visits to schools, engaging over 4000 pupils in biodiversity and natural environment activities.
- GCC-CRS ran 4 forest school programmes at Hogganfield Park LNR and Rosshall Park.
- GCC-CRS attended 9 Eco-school days and carried out biodiversity themed activities to over 1600 pupils.
- GCC-CRS delivered the biodiversity message through face-to-face contact to 11,500
- Wild About Glasgow events included 32 guided walks, activities and events with biodiversity elements.
- Glasgow Life manned a stall relating to biological recording and the River Kelvin at the Glasgow Science Festival's 'Science Sunday' in June.
- Glasgow Life continue to promote biodiversity and wildlife conservation to the public, through museum displays and activities, in partnership with RSPB at Kelvingrove Museum.

Appendix (iii)

Glasgow City Council

Biodiversity Monitoring Report

April 2016- March 2017

1. Background and Context

1.1 This report has been compiled by GCC-LES Natural Environment Team with the support of the Council's partners in the Glasgow Biodiversity Partnership. The purpose of the partnership is to bring a broad range of expertise to the development of Glasgow's Local Biodiversity Action Plan. The Council established a Glasgow Biodiversity Partnership consisting of representatives from 16 different environmental organisations. Key partners include Scottish Natural Heritage, Forestry Commission Scotland, Scottish Environment Protection Agency and the Royal Society for the Protection of Birds (Scotland) along with other environmental interest groups.

1.2 Monitoring is a crucial part of the process and this report summarises the outcomes of the 13th Monitoring Report of Glasgow's Local Biodiversity Action Plan.

1.3 Over the past year, the GCC-LES Natural Environment Team has been working with its partners to deliver the implementation of a number of key actions as detailed within Glasgow's Local Biodiversity Action Plan (LBAP).

1.4 Under the Nature Conservation (Scotland) Act (2004), all public bodies in Scotland are required to further the conservation of biodiversity when carrying out their responsibilities. The Council fulfils this primarily through the implementation of the Glasgow LBAP.

1.5 The Wildlife and Natural Environment (Scotland) Act (2011), further requires public bodies in Scotland to provide a publicly available report, every three years, on the actions they have carried out to meet the biodiversity duty.

The content of this annual biodiversity report will contribute towards the statutory Biodiversity Duty Report due for publication in January 2018.

2. Monitoring Report

2.1 The year to end March 2017 saw further progress on many fronts for all the main habitat groups (Grasslands, Wetlands, Woodlands and Farmland) which are reported in sections 2.1.2. to 2.1.4 of this report and useful work being undertaken for several species groups such as butterflies, waterfowl, wildflowers and water voles as indicated in section 2.1.4. Many initiatives are on-going; however, each year new projects or activities are started.

2.1.1 City-wide

- Refreshed LBAP drafted.
- LBAP Partnership meeting held in June.
- Supplementary Guidance 7 Natural Environment approved as part of the City

Development Plan. The guidance states all new developments should conserve and enhance populations of LBAP priority species and that development should not result in a loss of biodiversity.

- Glasgow hosted the Biodiversity Network meeting in October.
- The GCC-LES Biodiversity Officers attended the 20 Years Celebration of biodiversity event at the Scottish Parliament and contributed project information for the promotional booklet and displays.
- One new LNR declared at Hamiltonhill Claypits bringing the total number of LNRs in Glasgow to 12. LNR area/1,000 population of the city remains at 0.86 hectares but is still on target to reach 1 hectare/1,000 population by 2020.
- An audit of all the wildflowers grown successfully from seed since December 2016 in the city-wide wildflower nursery (Pollok Country Park) has been carried out.
- 26 Scottish provenance species were successfully propagated and 1109 healthy plugs and potted plants grown on at the city-wide wildflower nursery.
- A draft Glasgow Pollinator Plan has been prepared.
- RSPB 'Giving Nature A Home' project continued in collaboration with Glasgow Life and GCC-LES.
- 6 Parks and LNRs have retained their Green Flag status.
- 5 year M74 habitat and species monitoring carried out by biodiversity officers on behalf of Transport Scotland completed (2012-2016) and final report produced.
- Weekly planning lists monitored by GCC-LES Biodiversity Officers for potential biodiversity impact and enhancement opportunities.
- Ecological survey reports generated for sites as part of planning applications for developments, and biodiversity included in development briefs/marketing information for city property transactions.
- Community Payback Services carried out a variety of tasks including litter picks, wildlife gardens, bug hotels and outdoor learning areas. This involved approx. 120 sites across the city and over 20,000 client hours.

- GCC Social Work Services and Development Regeneration Services delivered new build properties for homeless people – the construction included meadow/wildflower grassed areas, bird nesting boxes and bird baths.

2.1.2 Grasslands and Farmland

The targets for unimproved grassland, heathland and farmland are to ensure that there is no net loss of such habitats and that attempts should be made to increase their extent and quality through restoration and positive management. Key outcomes for the period include:

- In total, Glasgow now has over 65 hectares of wildflower meadows managed for biodiversity, which amounts to more than 75 Hampden Park sized football pitches.
- Over 80 hectares of farmland at Carmunnock, Pedmyre and Windlaw is managed positively for biodiversity. This includes wildflower meadows, sensitive hedgerow management, trees and pond creation.
- Pictorial meadow strips (1 metre wide) were created at the front of uncut grass areas using Cornfield Annuals at 11 locations with a combined length of 765 metres.
- Creation of Swift habitat at Bellahouston Demonstration Garden through scrub clearance and wildflower planting.
- Over 30,000 daffodils and over 10,000 fritillaria, crocus and chionodoxa bulbs planted in various parks in October. Although these are non-native species, they can contribute to pollinator nectar sources.
- Wildflower planting was carried out by TCV at Robroyston Park, Dawsholm Park
- TCV ReWilding Project planted wildflowers at Trinley Braes.
- Water Vole habitat was extended at Inishail by scarification and seed growing.
- Seven Lochs Water Vole project has developed a 3 year intensive grassland management trial to be carried forward.
- Forestry Commission (Scotland) cut meadow at Cleddans Burn and treated areas of Japanese Knotweed at Auchenshuggle, Drumchapel and Easterhouse woods.

- RSPB have created 12 new meadows near schools and communities close to House Sparrow populations.
- Almost 1500m² species-rich turf laid as part of GCC-LES landscaping projects.

2.1.3 Wetlands

The targets for wetlands are to ensure that there are no net losses of such habitats and that attempts should be made to increase their extent and quality through creation, restoration and positive management. Key outcomes for the period include:

- Seven Lochs Wetland Park project staff appointed – 4 posts.
- Seven Lochs Wetland Park projects continue, including wetland and meadow habitat management at Hogganfield Park LNR and a Water Vole Project which has set up a monitoring programme for 2018-2020.
- Biohavens launched at Hogganfield Loch – resulting in a pair of Great Crested Grebes nesting and raising one young.
- Funding of £50K secured from Scottish Landfill Communities Fund to support further installation of Biohavens at Hogganfield Loch and for a programme of biodiversity volunteers at sites across the Seven Lochs area.
- Pond creation and associated wetland wildflower and aquatics planting at Bellahouston Demonstration Garden.
- TCV ReWilding Project created more open water habitat at Garscadden Burn Park and transplanted wetland plants to Knightswood Park pond edges.
- Wetland planting carried out at the new Lambhill Cemetery SUDS.
- TCV volunteers created a new pond at Linn Park LNR.
- Friends of Glasgow LNRs cut back vegetation and litter picked at Bingham's Pond SINC.

2.1.4 Woodland (& Urban Tree Cover)

The targets are to ensure no further loss in extent of the existing woodlands and amenity tree cover whilst encouraging regeneration, new planting and appropriate management to increase the amount and quality of tree cover habitats in the city.

LES Parks & Open Spaces teams remains the focus for implementing woodland management and access work on council land as well as enabling and assisting community participation in woodland management.

A large percentage of woodland management works on council land has been enabled through seeking Scottish Government grants (Scottish Rural Development Programme). Key outcomes for the period include:

- Continuing development of Urban Woodland Management Plans for key woodlands across Glasgow (covering over 250ha) in order to set management objectives and works programmes onwards which include bringing Cart & Kittoch SSSI back into favourable condition.
- Working with other council departments and Glasgow Clyde Valley Green Network Partnership to develop a Greater Easterhouse Woodland Strategy. Greater Easterhouse Woodlands Management and Expansion opportunities – report establishes rationale and evidence to inform woodland management, protection and creation throughout Greater Easterhouse. Identifies that developments in the area should enhance biodiversity. Numerous woodlands are highlighted as areas which could potentially improve biodiversity.
- Developing woodland creation planting (c.1.5ha) at Heathcot Avenue in Drumchapel
- Supporting community groups in undertaking direct woodland management in council sites in association with other public bodies.
- Identifying additional UK BAP woodland Priority Habitats in Glasgow as part of the LBAP refresh; these are Upland Mixed Ashwoods, Upland Oakwoods and Wood-Pasture & Parkland making a total of 6 UK BAP woodland Priority Habitats in Glasgow along with Lowland Mixed Deciduous Woodlands, Upland Birchwoods and Wet Woodland.
- Planting of over 200 extra heavy standard trees as part of annual strategic amenity tree planting programme, commemorative sales and planned landscape works and over 8,000 tree whips in woodland creation planting.
- Over 50,600 individual trees surveyed and stored in council's tree management system.
- Detailed design works produced for proposed woodland creation at King's Park old golf course as part of SUDS to manage surface water locally, new

street tree provision in Sauchiehall Street and greenspace improvement works on vacant and derelict land.

- Stage 2 application to CSGN Development Fund for a feasibility study in 2017-18 to link access and tree cover between Linn Park, Cart & Kittoch SSSI, Pedmyre Grasslands, Cathkin Braes LNR and Castlemilk Park & Woodlands with further links then to Kings Park and new woodland creation on the disused Kings Park Golf Course.
- Further development for restoration of designed landscape at Alexandra Park.
- Woodland thinning at Springburn Park to remove diseased trees and some sapling regeneration to open up glades and improve habitats in the SINC.
- Paths upgraded at Dawsholm Park LNR, allowing better access to the SINC and woodlands.
- FoGLNRs created a new hedge at Dams to Darnley LNR using a Woodland Trust pack, 300 trees, and with the support of GCC and TCV.
- Bird boxes (6) erected as part of GCC-LES landscaping projects.

2.1.5 Species Survey and Monitoring

The target for species monitoring is to understand the variety, distribution and numbers of species that inhabit our city and record trends over time. Glasgow's records are maintained in the Glasgow Museums Resource Centre. Key outcomes for the period include:

- Green Hairstreak monitoring carried out at Commonhead Moss in May.
- M74 wildflower and protected species monitoring carried out. This was the last year of a 5 year monitoring project. A final report was produced by GCC-LES Biodiversity Officers for Transport Scotland.
- Butterfly Conservation Scotland and volunteers carried out butterfly transects at Glasgow Museums Resource Centre, Nitshill, Commonhead Moss, Cardowan Moss, Robroyston Park, Hurlet Hill and Cathkin Braes.
- Butterfly Conservation Scotland carried out monthly moth recording at Glasgow Botanic Gardens, Hidden Gardens and private gardens in Jordanhill, Kelvinhaugh, Kelvindale and Cathcart.
- Solitary bee population monitoring carried out at Victoria Park.
- Biological records sent to the Glasgow Museums Biological Records Centre.

- Scottish Badgers information sharing and planning best practice training day held at Tollcross Park and various Glasgow sites.
- Water vole training for GCC-CRS carried out by the Water Vole Ambassador and GCC-LES Biodiversity Officer.
- Water vole training carried out for Seven Lochs partners as part of the Seven Lochs Water Voles in the City project.
- Water quality testing carried out at Hogganfield Loch.
- Blue-green Algae monitoring carried out at 43 water bodies city-wide. The Countryside Rangers monitored the ponds for cyanobacteria (blue-green algae), took water samples and sent them to Scottish Environment Protection Agency (SEPA) for analysis, who responded following guidance provided by the Scottish Government in their document on Cyanobacteria (Blue-green algae) in inland and inshore waters: assessment and minimisation of risks to public health.
- RSPB monitored 18 House Sparrow nest boxes around the city.
- FoGLNRs monitored nest boxes at Bingham's Pond, Hogganfield Park LNR and Dawsholm Park LNR – 22 out of 27 nest boxes were being used by Blue Tits and Great Tits.
- 49 surveys were undertaken by GCC Countryside Rangers, including Toothwort, fossorial Water Voles, Skylark, butterflies, Common Frog, newts and Daubenton's bat.

2.1.6 People and Awareness

The broad objective for raising awareness is to spread information on the environment in a Glasgow context to all sectors of the community. The Natural Environment Team includes 8 Countryside Rangers FTE posts and 1 Senior Countryside Ranger who are site based and play a major role in delivering environmental education, awareness and access. Key outcomes for the period include:

- Wildlife Haven signage erected at various meadow sites in the city to raise awareness of this habitat.
- Launch of the Urban Butterfly Project at Glasgow Botanic Gardens in April. This project was run by Butterfly Conservation Scotland and supported by Glasgow City Council.

- Three public training workshops (Pollok Country Park, Robroyston Park LNR and Tollcross Park) and various events held to promote butterflies and pollinators as part of the Urban Butterfly Project.
- Environment Minister visited Commonhead Moss during Climate Week – promoting the bog restoration works carried out, through Climate Ready Clyde.
- Bee bank created at Alexandra Park by GCC and TCV volunteers.
- Local Nature Reserve (LNR) celebration events were held at six Glasgow LNRs (Robroyston Park, Cardowan Moss, Hogganfield Park, Linn Park, Cathkin Braes & Hamiltonhill Claypits) plus a very popular Butterflies & Blooms Celebration Day at Pollok Country Park. The events attracted a total of 1,196 volunteers of whom 651 were new to volunteering, who in turned enhanced an area of 18,255m² across 9 different habitats by planting a total of 4708 meadow wild flowers. Action Earth Certificates were given to every participant who planted wildflowers.
- Schools Biodiversity Day was held at Robroyston Local Nature Reserve during Scottish Nature Festival. This involved over 100 pupils from 3 primary schools.
- GCC-CRS supported ‘The Scottish Curriculum for Excellence through outdoor learning’ delivering across 8 key topic areas in across 91 schools in Glasgow of which 53% were schools in the highest 20% of SIMD areas, (this increased to 70% delivering in the top deprived schools in the North & East of the city). Curricular visits were made to 91 different schools across 30 different Glasgow parks, engaging 3921 pupils from nursery, primary and secondary years.
- GCC-CRS attended 7 Eco-school days taking biodiversity themed activities with them to an audience of 627 pupils.
- GCC-CRS ran 4 forest school programmes.
- Community Co-ordinator for the citywide Flower Power Wildflower Nursery at Pollok Country Park in place (student placement), this involves event planning, social media promotion and practical hands-on help in the development of this Grow-wild project.
- The “Wild Waters of the White Cart Project” Natural Networks Trainee was placed with the Countryside Rangers. The trainee’s key project was establishing a citywide wildflower nursery at Pollok run with community

involvement. Key achievements included 17 volunteer days, engaging with 2000+ people at 59 events, collecting thousands of native wildflower seeds, growing 240 plug plants and sowing over 1152 seeds with volunteers, distributing 1000+ plants to local community groups, running 10 workshops, training up to 80 people, attending 42 training courses, forming partnerships with at least 14 organisations/community groups.

- Wild About Glasgow diary of countryside events included 28 free guided walks, activities and events run by the Countryside Rangers to promote awareness understanding and care of Glasgow wild places. In addition to these advertised events the ranger have led a further 41 events in response to community requests and attended 28 community run events. In total of 3,838 individuals attended these 97 events and interacted with Countryside Rangers and Glasgow's wildlife on face to face basis.
- GCC-CRS delivered 3,366 volunteer hours equivalent to 571 working days (2.5 years) with 1,182 volunteers in practical conservation tasks across the city which enhanced biodiversity across an area of 34,822m².
- GCC-CRS delivered the biodiversity message to 10,166 members of the public. This included 3,921 school children at outdoor education events/studies, 5,063 at guided walks and local nature reserve days and 1,182 through volunteering on practical conservation tasks. GCC-CRS worked with 24 different partner agencies collaboratively in achieving these outputs and outcomes.
- Landtrust funded TCV project carried out 980 volunteer hours of habitat creation and enhancement at 5 LNR sites.
- Corporate volunteers from the University of Glasgow and the Royal Bank of Scotland completed over 270 hours of habitat management on 7 sites in Glasgow.
- Woodland creation at Drumchapel involved 370 volunteer hours planting almost 8000 native tree species with assistance from OVO Energy who provided the trees.
- GCC-LES Biodiversity Officer gave a presentation on the Biodiversity of Glasgow to Glasgow Natural History Society in April.
- Wildflower seed and biodiversity management advice provided for a new community garden in Kingsway, Whiteinch.
- Scoping and funding application made by Butterfly Conservation Scotland for new butterfly garden in Tollcross Park.

- New management steering group created for Glasgow's newest LNR at Hamiltonhill Claypits.
- Fossorial water vole website and 'Water Vole Fun Facts' created to promote the special fossorial water vole population in Glasgow. This was supported by SNH, the University of Glasgow and GCC.
- Seven Lochs water vole project developed an Education Pack in partnership with RSPB and promoted the species with publicity and promotion through social media and magazine articles.
- Articles in the Evening Times, Scotsman, LNR network newsletter and on the GCC website publicised the Hogganfield Biohavens and promoted Glasgow's biodiversity.
- Glasgow Natural History Society held 3 field excursions in Glasgow and 2 joint excursions with the Clyde and Argyll Fungus Group.
- RSPB held bioblitzes at North Kelvin Meadow and Hidden Gardens.
- Butterfly Conservation Scotland and Clyde Bat Group held annual Bat and Moth Night in the Glasgow Botanic Gardens.
- Urban Nature Scottish Parliament event featured Glasgow projects – Seven Lochs Wetland Park, Hamiltonhill Claypits, The Back Garden, Greater Easterhouse Integrated Green Infrastructure and North Glasgow Integrated Water Management Systems.
- RSPB 'Giving Nature A Home' project continued in collaboration with Glasgow Life and GCC-LES.
- 12 House Sparrow meadow plots created as part of RSPB's 'Giving Nature A Home' project (Maryhill Park x 2, Old Station Park x 2, Dyce Park, Glasgow Necropolis, Ardery Street, Elder Park and Hillhead High School, Glasgow University Wildlife Garden, Viewfield Lane & Pirie Park Primary).
- RSPB GNAH established a new connection with the Friends of Springburn Park with a view to beginning work with the community group on the SINC part of the park through volunteer sessions beginning at the end of June.
- RSPB GNAH held 3 networking meetings and 7 training events on wildlife and surveying techniques.
- RSPB GNAH involved over 2515 primary school pupils in field teaching at Kelvingrove Park, 6916 families engaged through Kelvingrove Museum & Art

Gallery. 777 families engaged with through pre-5 education in Kelvingrove Park and 562 individuals through John Muir Award with Hillhead Primary School in Kelvingrove Park.

- RSPB worked with four ambassador schools to deliver sessions on their priority species. We engaged with 2364 children from ambassador schools.
- RSPB GNAH held Glasgow Wildfest, engaging with 2051 people across 40 events during September.
- RSPB GNAH engaged over 150 volunteers and delivered 40 practical conservation days. Also worked with 20 community groups to improve their sites for nature.
- RSPB GNAH worked with 6 ambassador secondary schools on priority species – including advocacy within local communities and decision making and works in school grounds to benefit the target species.
- RSPB held nest box building events at Kelvingrove Museum & Art Gallery and the Riverside Museum where 76 nest boxes were built.
- Friends of Glasgow's LNRs carried out 4 wildfowl feeding and education events at Hogganfield Park LNR.